

# Ohio State University Horticulture and Crop Science

## Early Preplant Burndown in Corn with Valor, V-10233 and Authority MTZ

Title No. 2:  
Trial ID: 10NTC2                      Protocol ID: 10NTC2  
Location: WESTERN BRANCH F-9 E      Study Director: Anthony F. Dobbels  
Project ID:                                      Investigator: Dr. Mark M. Loux  
Sponsor Contact:

### General Trial Information

**Study Director:** Anthony F. Dobbels    **Title:** Research Specialist  
**Investigator:** Dr. Mark M. Loux        **Title:** Professor

### Trial Location

**City:** South Charleston                **Latitude of LL Corner °:** 39.8587 N  
**State/Prov.:** Ohio                        **Longitude of LL Corner °:** 83.67077 W  
**Postal Code:** 45368                      **Altitude of LL Corner, Unit:** 1084.00 FT  
**Country:** USA

### Personnel

**Study Director:** Anthony F. Dobbels    **Title:** Research Specialist  
**Affiliation:** The Ohio State University  
**Address:** 7721 South Charleston Pike  
**Location:** South Charleston OH  
**Postal Code:** 45368                      **E-mail:** dobbels.1@osu.edu  
**Investigator:** Dr. Mark M. Loux        **Title:** Professor  
**Affiliation:** The Ohio State University  
**Address:** 222 Kottman Hall, 2021 Coffey Road  
**Location:** Columbus OH  
**Postal Code:** 43210                      **E-mail:** loux.1@osu.edu

### Crop Description

**Crop 1:** ZEAMX    Zea mays                      Corn  
**Variety:** Seed Consultants SC11HQ38  
**BBCH Scale:** BCOR  
**Planting Method:** SEEDED                seeded  
**Depth, Unit:** 2                      IN  
**Row Spacing, Unit:** 30                      IN  
**Seed Bed:** MEDTRA                      medium/trashy  
**Soil Moisture:** MOIST  
**Harvest Date:** 9/14/10  
**Harvested Width, Unit:** 5                      FT  
**% Standard Moisture:** 15.5  
**Weighing Equipment:** HARVEST MASTER 401

**Description:** RR/LL  
**Planting Date:** 4/29/10  
**Rate, Unit:** 32097                      S/A  
**Soil Temperature, Unit:** 52                      F  
**Emergence Date:** 5/10/10  
**Harvest Equipment:** MASSEY 8 XP  
**Harvested Length, Unit:** 30                      FT  
**Moisture Meter:** HARVEST MASTER

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## Pest Description

**Pest 1 Type:** W **Code:** STEME *Stellaria media*  
**Common Name:** Common chickweed

**Pest 2 Type:** W **Code:** LAMPU *Lamium purpureum*  
**Common Name:** Purple deadnettel

**Pest 3 Type:** W **Code:** CAPBP *Capsella bursa-pastoris*  
**Common Name:** Shepherd's purse

**Pest 4 Type:** W **Code:** ERICA *Conyza canadensis*  
**Common Name:** Canada horseweed

**Pest 5 Type:** W **Code:** LEPVI *Lepidium virginicum*  
**Common Name:** Virginia pepperweed

**Pest 6 Type:** W **Code:** TAROF *Taraxacum officinale*  
**Common Name:** Common dandelion

**Pest 7 Type:** W **Code:** VERAG *Veronica agrestis*  
**Common Name:** Field speedwell

**Pest 8 Type:** W **Code:** SONAR *Sonchus arvensis*  
**Common Name:** Perennial sowthistle

**Pest 9 Type:** W **Code:** RUMCR *Rumex crispus*  
**Common Name:** Curly dock

**Pest10 Type:** W **Code:** SETFA *Setaria faberi*  
**Common Name:** Giant foxtail

**Pest11 Type:** W **Code:** AMBEL *Ambrosia artemisiifolia*  
**Common Name:** Common ragweed

**Pest12 Type:** W **Code:** LACSE *Lactuca serriola*  
**Common Name:** Prickly lettuce

**Pest13 Type:** W **Code:** CHEAL *Chenopodium album*  
**Common Name:** Common lambsquarters

**Pest14 Type:** W **Code:** AMBTR *Ambrosia trifida*  
**Common Name:** Giant ragweed

## Site and Design

**Plot Width, Unit:** 6.67 FT  
**Plot Length, Unit:** 30 FT  
**Plot Area, Unit:** 200.1 FT<sup>2</sup>  
**Replications:** 3

**Site Type:** FIELD field  
**Experimental Unit:** 1 PLOT plot  
**Tillage Type:** NOTILL no-till  
**Study Design:** RACOBL Randomized Complete Block (RCB)  
**Untreated Arrangement:** INCLUDED single control randomized in each block

## Soil Description

**Description Name:** F-9 East  
**% OM:** 2.8 **Texture:** SICL silty clay loam  
**pH:** 5.7 **Soil Name:** Kokomo  
**CEC:** 21 **Fert. Level:** G good  
**Soil Drainage:** G good

## Application Description

	A	B	C
<b>Application Date:</b>	4/21/10	4/30/10	6/7/10
<b>Time of Day:</b>	9:30 A.M.	9:00 A.M.	11:30 AM
<b>Application Method:</b>	SPRAY	SPRAY	SPRAY
<b>Application Timing:</b>	7 EPP	PRE	POST
<b>Application Placement:</b>	BROFOL	BROFOL	BROFOL
<b>Applied By:</b>	McCormick	McCormick	McCormick
<b>Air Temperature, Unit:</b>	53 F	64 F	73.3 F
<b>% Relative Humidity:</b>	49	68	78.8
<b>Wind Velocity, Unit:</b>	3 MPH	8 MPH	4.5 MPH
<b>Wind Direction:</b>	WSW	S	W
<b>Dew Presence (Y/N):</b>	N no	N no	N no
<b>Soil Temperature, Unit:</b>	50 F	52 F	64 F
<b>Soil Moisture:</b>	DRY	NORMAL	WET
<b>% Cloud Cover:</b>	2	20	70
<b>Next Rain Occurred On:</b>		5/1/10	6/8/10

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## Crop Stage At Each Application

	A	B	C
Crop 1 Code, BBCH Scale:	ZEAMX BCOR	ZEAMX BCOR	ZEAMX BCOR
Stage Scale Used:			BBCH
Stage Majority, Percent:			17 100
Height, Unit:			16 IN

# Ohio State University Horticulture and Crop Science

## Pest Stage At Each Application

	A		B		C	
<b>Pest 1 Code, Type, Scale:</b>	STEME	W	STEME	W	STEME	W
<b>Stage Majority, Percent:</b>	65	100	65	100	65	
<b>Diameter, Unit:</b>	12	IN	14	IN		
<b>Height, Unit:</b>	4	IN	4	IN	8	IN
<b>Height Minimum, Maximum:</b>	4	6	3	4	6	10
<b>Density, Unit:</b>	4	M2	4	M2		
<b>Pest 2 Code, Type, Scale:</b>	LAMPU	W	LAMPU	W	LAMPU	W
<b>Stage Majority, Percent:</b>	65	100	65	100		
<b>Diameter, Unit:</b>	4	IN	4	IN		
<b>Height, Unit:</b>	6	IN	6	IN		
<b>Height Minimum, Maximum:</b>	4	6	6	7		
<b>Density, Unit:</b>	12	M2	12	M2		
<b>Pest 3 Code, Type, Scale:</b>	CAPBP	W	CAPBP	W	CAPBP	W
<b>Stage Majority, Percent:</b>	65	100	65	100		
<b>Diameter, Unit:</b>	5	IN	5	IN		
<b>Height, Unit:</b>	14	IN	15	IN		
<b>Height Minimum, Maximum:</b>	12	16	13	16		
<b>Density, Unit:</b>	1	M2	1	M2		
<b>Pest 4 Code, Type, Scale:</b>	ERICA	W	ERICA	W	ERICA	W
<b>Stage Majority, Percent:</b>	19	100	19	100	19	100
<b>Diameter, Unit:</b>	3	IN	3	IN		
<b>Height, Unit:</b>	3	IN	3	IN	11	IN
<b>Height Minimum, Maximum:</b>	3	4	2	4	10	12
<b>Density, Unit:</b>	3	M2	3	M2		
<b>Pest 5 Code, Type, Scale:</b>	LEPVI	W	LEPVI	W	LEPVI	W
<b>Stage Majority, Percent:</b>	65	100	65	100		
<b>Diameter, Unit:</b>	6	IN	8	IN		
<b>Height, Unit:</b>	20	IN	22	IN		
<b>Height Minimum, Maximum:</b>	18	20	18	22		
<b>Density, Unit:</b>	0.25	M2	0.25	M2		
<b>Pest 6 Code, Type, Scale:</b>	TAROF	W	TAROF	W	TAROF	W
<b>Stage Majority, Percent:</b>	65	100	65	100		
<b>Diameter, Unit:</b>	6	IN	14	IN		
<b>Height, Unit:</b>	5	IN	8	IN		
<b>Height Minimum, Maximum:</b>	4	6	6	8		
<b>Density, Unit:</b>	0.33	M2	0.33	M2		
<b>Pest 7 Code, Type, Scale:</b>	VERAG	W	VERAG	W	VERAG	W
<b>Stage Majority, Percent:</b>	65	100	65	100		
<b>Diameter, Unit:</b>	6	IN	8	IN		
<b>Height, Unit:</b>	2	IN	3	IN		
<b>Height Minimum, Maximum:</b>	2	3	2	3		
<b>Density, Unit:</b>	2	M2	2	M2		
<b>Pest 8 Code, Type, Scale:</b>	SONAR	W	SONAR	W	SONAR	W
<b>Stage Majority, Percent:</b>	19	100	19	100		
<b>Diameter, Unit:</b>	5	IN	6	IN		
<b>Height, Unit:</b>	6	IN	10	IN		
<b>Height Minimum, Maximum:</b>	5	6	8	10		
<b>Density, Unit:</b>	0.25	M2	0.25	M2		
<b>Pest 9 Code, Type, Scale:</b>	RUMCR	W	RUMCR	W	RUMCR	W
<b>Stage Majority, Percent:</b>	19	100	19	100	19	100
<b>Diameter, Unit:</b>	5	IN	6	IN		
<b>Height, Unit:</b>	8	IN	12	IN	30	IN
<b>Height Minimum, Maximum:</b>	6	8	10	12	25	35
<b>Density, Unit:</b>	0.1	M2	0.1	M2		
<b>Pest10 Code, Type, Scale:</b>	SETFA	W	SETFA	W	SETFA	W
<b>Stage Majority, Percent:</b>					15	100
<b>Height, Unit:</b>					10	IN
<b>Height Minimum, Maximum:</b>					9	10
<b>Pest11 Code, Type, Scale:</b>	AMBEL	W	AMBEL	W	AMBEL	W
<b>Stage Majority, Percent:</b>					15	100
<b>Height, Unit:</b>					7	IN
<b>Height Minimum, Maximum:</b>					6	8
<b>Pest12 Code, Type, Scale:</b>	LACSE	W	LACSE	W	LACSE	W
<b>Stage Majority, Percent:</b>					19	100
<b>Height, Unit:</b>					48	IN
<b>Height Minimum, Maximum:</b>					40	50
<b>Pest13 Code, Type, Scale:</b>	CHEAL	W	CHEAL	W	CHEAL	W
<b>Stage Majority, Percent:</b>					14	100
<b>Height, Unit:</b>					12	IN
<b>Height Minimum, Maximum:</b>					10	14
<b>Pest14 Code, Type, Scale:</b>	AMBTR	W	AMBTR	W	AMBTR	W
<b>Stage Majority, Percent:</b>					35	100
<b>Height, Unit:</b>					8	IN
<b>Height Minimum, Maximum:</b>					6	10

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## Application Equipment

	A	B	C
<b>Appl. Equipment:</b>	6 foot boom	6 foot boom	6 foot boom
<b>Equipment Type:</b>	SPRBAC	SPRBAC	SPRBAC
<b>Operating Pressure, Unit:</b>	53 PSI	53 PSI	53 PSI
<b>Nozzle Type:</b>	TEEJET DG	TEEJET DG	TEEJET DG
<b>Nozzle Size:</b>	8002	8002	8002
<b>Nozzle Spacing, Unit:</b>	18 IN	18 IN	18 IN
<b>Boom Length, Unit:</b>	6 FT	6 FT	6 FT
<b>Boom Height, Unit:</b>	20 IN	20 IN	20 IN
<b>Ground Speed, Unit:</b>	3 MPH	3 MPH	3 MPH
<b>Carrier:</b>	WATER	WATER	WATER
<b>Spray Volume, Unit:</b>	20 GPA	20 GPA	20 GPA
<b>Mix Size, Unit:</b>	0.33 Gallons	0.33 Gallons	0.33 Gallons
<b>Propellant:</b>	CO2	CO2	CO2

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 Location: WESTERN BRANCH F-9 E      Study Director: Anthony F. Dobbels  
 Project ID:                                Investigator: Dr. Mark M. Loux  
    Sponsor Contact:

Pest Type  
 Pest Code  
 Pest Scientific Name  
 Pest Name  
 Crop Code                      ZEAMX    ZEAMX    ZEAMX  
 BBCH Scale                    BCOR     BCOR     BCOR  
 Crop Scientific Name        Zea Zea mays Zea mays  
    mays  
    Corn        Corn        Corn  
 Rating Date                    9/14/10   9/14/10   9/14/10  
 Rating Type                    YIELD    MOICON    YIELD  
 Rating Unit                    LBS        %           BU  
 Number of Subsamples        1           1           1  
 Assessed By  
 Days After First/Last Applic.    146 99   146 99   146 99  
 Trt-Eval Interval  
 Plant-Eval Interval            138 DP-1 138 DP-1 138 DP-1  
 Days After Emergence        127 DE   127 DE   127 DE  
 ARM Action Codes     TY1  
 Number of Decimals     1           1           1

Trt No.	Treatment Name	Form Conc	Other Rate	Other Rate	Unit	Appl Code	38	39	40
1	UTC						2.5 e	23.9 a	11.9 e
2	Roundup PowerMax	4.5	22 oz/a			A	31.7 c	25.2 a	145.3 c
	2 N-PAK AMS	100	3 qt/a						
	2 Roundup PowerMax	4.5	22 oz/a			C			
	2 N-PAK AMS	100	3 qt/a						
3	Roundup PowerMax	4.5	22 oz/a			A	32.0 c	25.3 a	146.6 c
	3 V-10233	76	3 oz/a						
	3 N-PAK AMS	100	3 qt/a						
	3 Roundup PowerMax	4.5	22 oz/a			C			
	3 Atrazine	4	1 pt/a						
	3 N-PAK AMS	100	3 qt/a						
4	Roundup PowerMax	4.5	22 oz/a			A	38.1 ab	25.2 a	174.7 ab
	4 Valor SX	51	2 oz/a						
	4 N-PAK AMS	100	3 qt/a						
	4 Roundup PowerMax	4.5	22 oz/a			C			
	4 Atrazine	4	1 pt/a						
	4 N-PAK AMS	100	3 qt/a						
5	Roundup PowerMax	4.5	22 oz/a			B	39.2 a	23.4 a	184.6 a
	5 Bicep II Magnum	5.5	1.5 qt/a						
	5 N-PAK AMS	100	3 qt/a						
	5 Roundup PowerMax	4.5	22 oz/a			C			
	5 N-PAK AMS	100	3 qt/a						
6	Roundup PowerMax	4.5	22 oz/a			B	33.9 bc	23.7 a	158.8 bc
	6 Lexar	3.7	1.5 qt/a						
	6 N-PAK AMS	100	3 qt/a						
	6 Roundup PowerMax	4.5	22 oz/a			C			
	6 N-PAK AMS	100	3 qt/a						
7	Roundup PowerMax	4.5	22 oz/a			B	39.5 a	23.3 a	185.9 a
	7 Corvus	2.63	3 oz/a						
	7 Atrazine	4	1 qt/a						
	7 N-PAK AMS	100	3 qt/a						
	7 Roundup PowerMax	4.5	22 oz/a			C			
	7 N-PAK AMS	100	3 qt/a						
8	Roundup PowerMax	4.5	22 oz/a			A	31.7 c	28.1 a	140.4 c
	8 V-10233	76	3 oz/a						
	8 N-PAK AMS	100	3 qt/a						
	8 Roundup PowerMax	4.5	22 oz/a			C			

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Pest Type			
Pest Code			
Pest Scientific Name			
Pest Name			
Crop Code	ZEAMX	ZEAMX	ZEAMX
BBCH Scale	BCOR	BCOR	BCOR
Crop Scientific Name	Zea	Zea	mays
	mays		
Crop Name	Corn	Corn	Corn
Rating Date	9/14/10	9/14/10	9/14/10
Rating Type	YIELD	MOICON	YIELD
Rating Unit	LBS	%	BU
Number of Subsamples	1	1	1
Assessed By			
Days After First/Last Applic.	146	99	146
Trt-Eval Interval			
Plant-Eval Interval	138 DP-1	138 DP-1	138 DP-1
Days After Emergence	127 DE	127 DE	127 DE
ARM Action Codes			TY1
Number of Decimals	1	1	1

Trt No.	Treatment Name	Form Conc	Other Rate	Other Rate Unit	Appl Code	38	39	40
8	N-PAK AMS	100	3 qt/a					
9	Roundup PowerMax	4.5	22 oz/a		A	31.8 c	25.7 a	145.2 c
9	Integrity	5.57	13 oz/a					
9	N-PAK AMS	100	3 qt/a					
9	MSO	100	0.8 qt/a					
9	Roundup PowerMax	4.5	22 oz/a		C			
9	N-PAK AMS	100	3 qt/a					
10	Authority MTZ	45	5.5 oz/a		B	32.2 c	30.1 a	137.7 c
10	Gramoxone Inteon	2	32 oz/a					
10	COC	100	0.8 qt/a					
10	Cadet	10	0.5 oz/a		C			
10	Ignite	2.34	22 oz/a					
10	Atrazine	4	32 oz/a					
10	COC	100	0.8 qt/a					
11	Authority MTZ	45	5.5 oz/a		B	30.7 c	27.0 a	137.3 c
11	Gramoxone Inteon	2	32 oz/a					
11	COC	100	0.8 qt/a					
11	Cadet	10	0.5 oz/a		C			
11	Roundup PowerMax	4.5	22 oz/a					
11	Atrazine	4	32 oz/a					
11	COC	100	0.8 qt/a					
12	Gramoxone Inteon	2	32 oz/a		B	22.7 d	26.3 a	102.2 d
12	Authority MTZ	45	5.5 oz/a					
12	COC	100	0.8 qt/a					
12	Cadet	10	0.5 oz/a		C			
12	Prowl H2O	3.8	2 pt/a					
12	Accent	75	0.66 oz/a					
12	NIS	100	6.4 oz/a					
13	Bicep II Magnum	5.5	1.6 qt/a		B	33.0 c	27.7 a	146.5 c
13	Gramoxone Inteon	2	32 oz/a					
13	COC	100	0.8 qt/a					
13	Cadet	10	0.5 oz/a		C			
13	Roundup PowerMax	4.5	22 oz/a					
13	Atrazine	4	32 oz/a					
13	COC	100	0.8 qt/a					
14	Gramoxone Inteon	2	32 oz/a		B	34.4 abc	26.8 a	154.6 bc
14	Authority MTZ	45	5.5 oz/a					
14	COC	100	0.8 qt/a					
14	Cadet	10	0.5 oz/a		C			
14	Roundup PowerMax	4.5	22 oz/a					
14	Sencor 75DF	75	2 oz/a					
14	COC	100	0.8 qt/a					

LSD (P=.05)	5.08	4.09	25.07
Standard Deviation	3.03	2.44	14.94
CV	9.78	9.44	10.61

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Pest Type					
Pest Code					
Pest Scientific Name					
Pest Name					
Crop Code	ZEAMX	ZEAMX	ZEAMX		
BBCH Scale	BCOR	BCOR	BCOR		
Crop Scientific Name	Zea Zea mays Zea mays				
Crop Name	mays				
Rating Date	Corn	Corn	Corn		
Rating Type	9/14/10	9/14/10	9/14/10		
Rating Unit	YIELD	MOICON	YIELD		
Number of Subsamples	LBS	%	BU		
Assessed By	1	1	1		
Days After First/Last Applic.	146	99	146		
Trt-Eval Interval	99	99	99		
Plant-Eval Interval	138 DP-1	138 DP-1	138 DP-1		
Days After Emergence	127 DE	127 DE	127 DE		
ARM Action Codes			TY1		
Number of Decimals	1	1	1		
Trt No.	Treatment Name	Form Conc	Other Rate	Other Rate	Appl Unit Code
	Bartlett's X2				
	P(Bartlett's X2)				
Replicate F		2.391		4.285	0.959
Replicate Prob(F)		0.1114		0.0246	0.3966
Treatment F		27.648		2.006	24.661
Treatment Prob(F)		0.0001		0.0635	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)  
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Crop Code  
ZEAMX, BCOR, Zea mays, = US

Rating Type  
YIELD = yield  
MOICON = moisture content

Rating Unit  
% = percent  
BU = bushel

Plant-Eval Interval  
138 DP-1 = 1 4/29/10

ARM Action Codes  
TY1 = 5.185714\*38\*(100-39)/84.5